

CLAIMS :

1. A video encoding method provided for encoding an input image sequence consisting of successive groups of frames, said method comprising for each successive frame, called current frame and subdivided into blocks, the steps of :

5 - estimating a motion vector for each block of the current frame ;
 - generating a predicted frame using said motion vectors respectively associated to the blocks of the current frame ;

 - applying to a difference signal between the current frame and the last predicted frame a transformation sub-step producing a plurality of coefficients and followed by a

10 quantization sub-step of said coefficients ;

 - coding said quantized coefficients ;

wherein a preprocessing step is applied to each successive current frame, said preprocessing step itself comprising the sub-steps of :

15 - a computing sub-step, provided for computing for each frame a so-called content-change strength (CCS) ;

 - a defining sub-step, provided for defining from the successive frames and the computed content-change strength the structure of the successive groups of frames to be encoded ;

20 - a storing sub-step, provided for storing the frames to be encoded in an order modified with respect to the order of the original sequence of frames.

2. An encoding method according to claim 1, in which said CCS is defined on the basis of the following rules :

 (a) the measured strength of content change is quantized to levels ;

25 (b) I-frames are inserted at the beginning of a sequence of frames having content-change strength (CCS) of level 0 ;

 (c) P-frames are inserted before a level increase of CCS occurs ;

 (d) P-frames are inserted after a level decrease of CCS occurs.

3. A video encoding device provided for encoding an input image sequence consisting of successive groups of frames, said device comprising the following means, applied to each
30 successive frame, called current frame and subdivided into blocks :

 - estimating means, provided for estimating a motion vector for each block of the current frame ;

 - generating means, provided for generating a predicted frame on the basis of said motion vectors respectively associated to the blocks of the current frame ;

- transforming and quantizing means, provided for applying to a difference signal between the current frame and the last predicted frame a transformation producing a plurality of coefficients and followed by a quantization of said coefficients ;

- coding means, provided for encoding said quantized coefficients ;

5 wherein said encoding device also comprises preprocessing means applied to each successive current frame and comprising itself the following means :

- computing means, provided for computing for each frame a so-called content-change strength (CCS) ;

10 - defining means, provided for defining from the successive frames and the computed content-change strength the structure of the successive groups of frames to be encoded ;

- storing means, provided for storing the frames to be encoded in an order modified with respect to the order of the original sequence of frames.

4. An encoding device according to claim 3, in which said CCS is defined on the basis
15 of the following rules :

(a) the measured strength of content change is quantized to levels ;

(b) I-frames are inserted at the beginning of a sequence of frames having content-change strength (CCS) of level 0 ;

(c) P-frames are inserted before a level increase of CCS occurs ;

20 (d) P-frames are inserted after a level decrease of CCS occurs.